United States
Department of
Agriculture

Soil
Conservation
Service

Champaign
Illinois

Department of
Transportation
Division of
Water Resources

Illinois

FLOODPLAIN MANAGEMENT RECONNAISSANCE STUDY REPORT

VERONA
GRUNDY COUNTY

VILLAGE OF VERONA

GRUNDY COUNTY, ILLINOIS

FLOODPLAIN MANAGEMENT

RECONNAISSANCE STUDY

Prepared By

U.S. Department of Agriculture
Soil Conservation Service
Champaign, Illinois

In cooperation with

STATE OF ILLINOIS
Department of Transportation
Division of Water Resources

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INTRODUCTION

Use of floodprone areas can be a severe problem in Illinois. Urbanization and floodplain encroachment are increasing the severity of this problem. Over 800 communities in Illinois have been identified as having flooding problems.

The Illinois Division of Water Resources (DWR) is the responsible state agency for urban flood control and for setting priorities of flood studies within urban areas. The Soil Conservation Service is providing assistance to the Division of Water Resources in setting these priorities. A joint coordination agreement was executed between the Division of Water Resources, State of Illinois, and the USDA, Soil Conservation Service on April 30, 1976 and revised in December 1978 to furnish technical assistance in carrying out Flood Hazard Studies. These studies are carried out in accordance with Federal Level Recommendation 3 of "A Unified National Program for Flood Plain Management," and under Section 6 of Public Law 83-566. A plan of study was executed in October 1983 for reconnaissance studies for 15 Illinois communities. These reconnaissance studies will utilize existing floodplain information, historical high water profiles, and the 100 year floodplain from flood insurance studies when available. Average annual damages are estimated for the structures within the floodplain.

This study was conducted and the report provided for the purposes of: 1) To evaluate needs for additional future studies, 2) to estimate average annual

damages, 3) to provide an updated estimate of the 100 year floodplain and map, and 4) to provide guidance and recommendations to the community for improved floodplain management.

STUDY AREA DESCRIPTION

The Village of Verona is located in Grundy County. It is in the southwest part of the county approximately 6 miles west and south of Mazon. The population of Verona is 251, according to the 1980 census.

Transportation facilities within the Verona area consist of the Atchison Topeka and Santa Fe Railroad and various major and minor blacktop roads, as well as several gravel base roads. No state or federal highway runs through the village. Illinois State Route #47, is located approximately 4 miles east of the corporate limits.

An area north of the village was mined for coal several years ago and the spoil left on the surface. This is now a state reclamation site with several large earth moving machines working on the project.

Overflow from Thunder Creek causes flooding at the south edge of the village. This stream flows in a general west to east direction where it outlets into Johnny Run. This water eventually outlets into the Mazon River, east of Mazon. The watershed of Thunder Creek at the east side of Verona is 7.5 square miles. The drainage is in the Illinois River Basin, hydrologic unit #07120005, Johnny Run subwatershed #050.

The watershed for Thunder Creek is flat to gently sloping. Trees and brush border the stream for 1 3/4 miles east of the village. Cultivated fields with a corn and soybean rotation, are planted in 90-95 percent of the watershed.

Rainfall for the area is normally 32.4 inches per year, of which 66 percent usually falls in April through September. Average seasonal snowfall is approximately 22 inches.

Thunder Creek is almost entirely rural in nature with very ltle, if any, development anticipated in the foreseeable future. It is a long and narrow watershed that mainly provides for an outlet for cropland drainage.

The soils of the watershed are of the Drummer, Ashkum, and Elliott series. The Drummer and Ashkum are very flat and subject to flooding. The Elliott is flat to gently sloping (0 to 5 percent) and most of the village is on this particular soil type. All of these soils are somewhat to poorly drained with slow to very slow permeability. This information is from the Soil Survey of Grundy County issued in May of 1980.

NATURAL VALUES

The village of Verona is located in an area of the state that is characterized by long and narrow drainage areas with many small and medium sized ditches. Several of these ditches have trees and woody plants on their banks. Crop fields are generally moderate to large in size on the nearly level or gently sloping farm lands. Some of the drainageways and old fence rows, provide a fairly large amount of varying quality riparian habitat as well as important travel routes for wildlife.

The interspersed land use and associated types of plant communities result in a variety of habitats which support a wide range of plant and animal species. The wide variety of plant and animal species present generally makes the area a pleasant place for people to live, work, and play.

FLOOD PROBLEMS

Flooding along Thunder Creek is generally the result of local, heavy rainfalls and could occur during any part of the year. Since most of the flooding is due to heavy rainfalls over a relatively small watershed, flooding is generally of short duration. The rainfall of December 2, 1982, according to local citizens, caused the highest water levels that anyone had seen or could remember seeing.

Because of the soil type (Elliott silt loam) throughout most of Verona, internal drainage problems and shallow water depressional areas cause more problems than the actual flooding of Thunder Creek. The drainage for most of the village is an old existing tile that was installed many years ago and is always subject to deterioration by weather and is probably overloaded. The existing street ditches are either very shallow or nonexisting, which means if the tile does not outlet the water, it will sit until it soaks into the ground or will eventually evaporate.

The area north of the railroad tracks does not have as much natural drainage as the area south of the tracks. Therefore, the surface drainage in the area north of the tracks needs to be improved to help ease the existing drainage problems. In the last few years, several homes have been constructed at the west side of the village. Little or no planning was done to take care of the surface water in this area.

Verona does not have a sewage treatment plant. The entire village uses individual septic systems that are located in Elliott soils that have naturally high ground water tables. During wet periods or high rainfalls, these septic systems will not function properly, causing many potential health problems.

The village does not have a water system, meaning each property owner is responsible for securing his own water for home use. Most owners have private wells, but in some cases, as many as three home owners will share a common well. These wells are usually located in a pit below ground level and are subject to flooding. Approximately 70 to 80% of all wells in the village have the potential for problems from shallow ponding or high water tables.

There are approximately 35 homes with basements located throughout the village. Because of the soils, a sump pump is a necessity to keep the basements reasonably dry. If the electricity goes off during storms, many of these basements could be entirely flooded, causing many more problems for the home owner. Water from sump pumps is outletting into low areas and causes standing ponded water that is stale and foul smelling for the homeowners and neighbors.

The flooding of Thunder Creek only floods 4 homes, 6 garages and sheds, and 1 business. These are all located at the south edge of the village, just to the north of the ditch. All actual flooding is within the lower block of the village, with flooding on both sides of Division Street. According to local citizens, water has never gone above Vine Street. The location map at the

back of this report shows the area affected by Thunder Creek. All other areas of the village are affected by drainage problems, and not actual flooding problems.

PROBLEM SUMMARY

Estimated average annual damages from floodwaters and ponded drainage areas to the village of Verona are listed below:

Flooding of Thunder Creek:

Number Homes	Number Garages & Sheds	Businesses	Total Value	Average Annual Damages
4	6	1	$244,000	$2,000

Annual damages caused by lack of internal drainage and ponding are as follows:

Approximately 35 wet basements:	$5,250
Yard damages:	4,100
Sump pump expenses:	1,750
Well pit expenses:	4,200
Total Additional Expense	$15,300

Total estimated average annual damages for the Village of Verona equals $17,300. Flooding starts at the 10 year frequency storm.

EXISTING FLOODPLAIN MANAGEMENT

The village of Verona has participated in the regular phase of the National Flood Insurance Program since May 25, 1978. Business and home owners may purchase flood insurance. The village does require building permits. They also have a zoning ordinance in effect.

RECOMMENDATIONS

It is recommended that the village of Verona continues to participate in the National Flood Insurance Program.

An adequate surface drainage system should be designed and constructed to drain the subdivision at the west edge of the village. At present, an outlet through the railroad tracks is at the southwest corner of the village. This outlet is low enough to handle the surface runoff from the village. Additional lines of surface drainage could be extended to the older section of the village to handle most of the area north of the railroad tracks.

Since the groundwater table is very high throughout the entire village limits, the village needs to continue to regulate or restrict construction of excavated crawl spaces, one-half and full basements.

Trees, brush, and debris should be kept out of the channel on Thunder Creek, south of the village limits. A few areas of Thunder Creek, especially east of Verona, are extensively overgrown with trees and brush. It may become necessary at some date for these areas to be cleared and snagged, to ensure that the proper outlet is available.

Water from sump pumps should not be outletted into areas where it will become trapped, causing standing, ponded water.

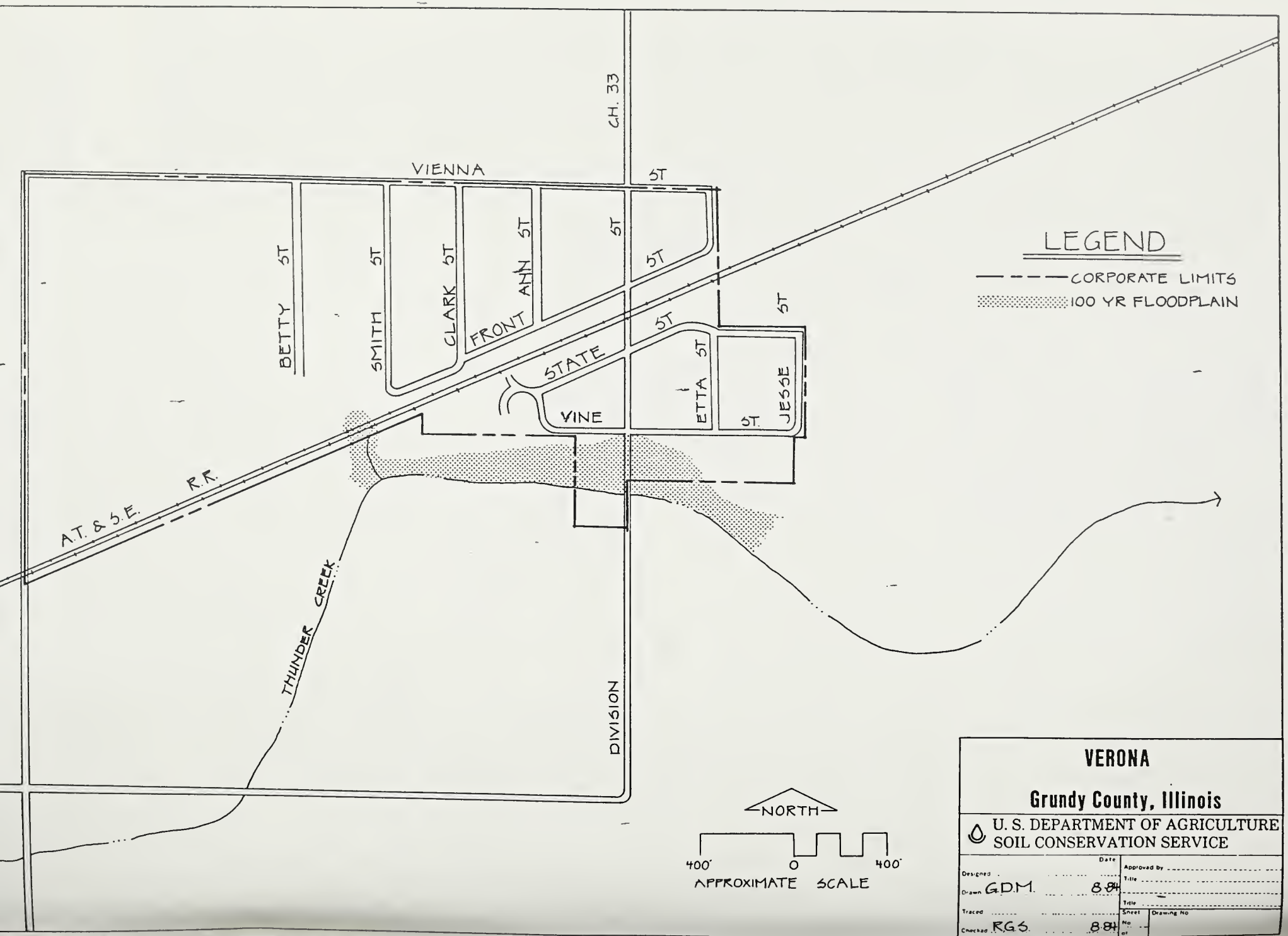
When the existing well pits become flooded, residents should use extreme caution before any consumption of the water. This could result in having the water tested before it could be used for human or pet consumption. If any doubt exists about the condition of the water, it should not be used.

A low priority should be assigned for future detailed floodplain management studies in Verona.

INVESTIGATION AND ANALYSIS

No additional calculation, discharges, or profiles were made as a part of this study. The inventory of flooding and water problems is based on a field review and interviews with local citizens. The Flood Hazard Boundary Map, along with interviews with local citizens, was used to determine the 100-year floodplain. Aerial photographs were provided by DWR. Damages were based on property value estimates during field review, and the application of damage factors. These factors come from previous detailed floodplain management studies.

VICINITY MAP
VERONA
GRUNDY CO., IL.
SCALE - 1" = 12 MILES



VERONA

Grundy County, Illinois

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

	Date	
Designed		Approved by
Drawn G.D.M.	8-84	Title
Traced		Title
Checked R.G.S.	8-84	Sheet No. of / Drawing No.

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